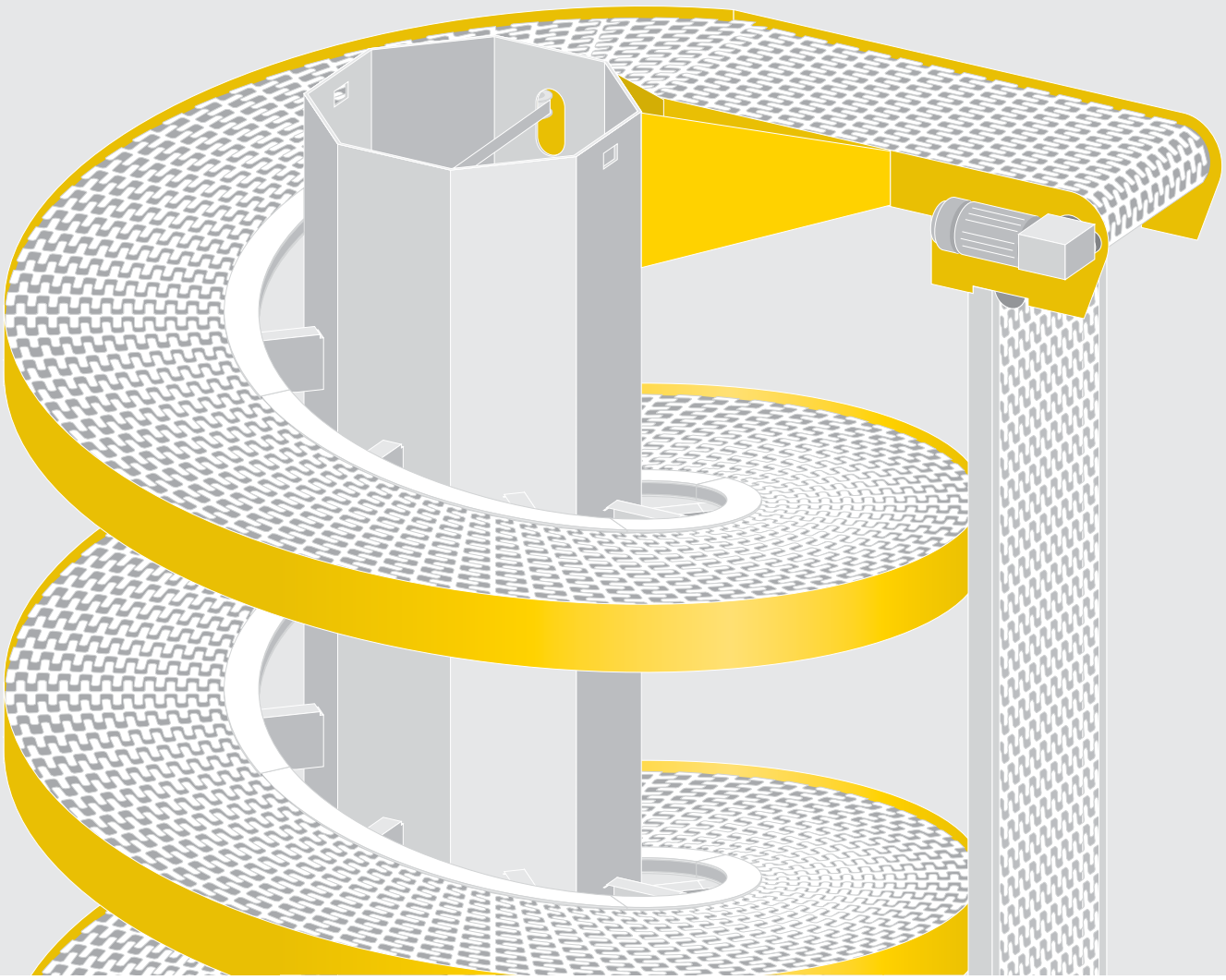
denipro...

Unternehmen für fördertechnische Teile und Komponentenbau

Conveying with ease



deniconda® spiral conveyors

Fitting and operating instructions

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1 General

All these instructions have only been drawn up by assembly, operational and maintenance personnel that are technically qualified. Before assembly and commissioning the deniconda® spiral conveyor, please read this instructions. This manual contains safety instructions.

The exact technical info for your deniconda® spiral conveyor is included in the specifications with the order confirmation.

Assembly is the same for all conveying angles and widths. The size shown in the figures was only selected to make the drawing easier to understand. The figures can be mirror images.

Important instructions in the text appear as follows:

Note

In this case, the user must respect unusual technical features.

Warning

In this case, procedures must be fully complied with to avoid damaging the machinery.

Stop

In this case, working procedures must be adhered to precisely to exclude the possibility of damaging the machinery and/or putting the user or other persons at risk.

2 Safety

2.1 Proper usage

The purpose of deniconda® spiral conveyors is to transport unit goods in conveying systems. Conveying people on deniconda® spiral conveyors is prohibited.

2.2 General safety instructions

deniconda® spiral conveyors are state of the art and comply with recognised safety regulations. If used improperly, risks can occur. deniconda® spiral conveyors may only be used when in perfect condition. To exclude the possibility of putting the user or other persons at risk and to avoid damage, they may only be assembled, maintained, repaired and operated by technically trained personnel.

All work with and operation of deniconda® spiral conveyors must be in compliance with:
- these regulations
- the conveyor's technical instructions
- all relevant statutory regulations and safety regulations.

Stop
Before carrying out any fitting, maintenance and repair work, the main switch on the section of the conveyor concerned must be switched off and prevented from being switched on again.

Stop
When the deniconda® spiral conveyor is running, do not reach into it. Parts of the body and clothing can be pulled in and get caught particularly in transfer points (1) and in the transition section between the in-feed and spiral (2). There is a risk of injuring yourself (fig. 2.2.1).

2.3 Operating conditions

deniconda® spiral conveyors are only suitable for contact with water if made of stainless steel.

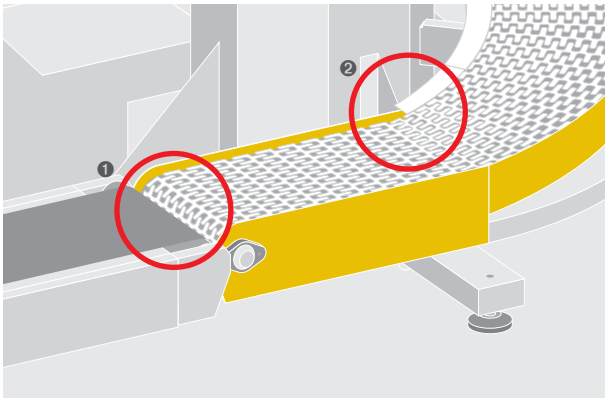
Stop
The motor is not splashproof.

Stop
deniconda® spiral conveyors are not explosion protected.

deniconda® spiral conveyors are not explosion protected and are operated under the following ambient conditions:
- ambient temperature in line with instructions in the data sheet
- normal atmosphere (no oil or gas atmospheres, no corrosive atmospheric components).

There is no guarantee that the conveyor will function properly if used in temperatures below or above those specified.
In certain conditions, static build-up can occur when using the deniconda® spiral conveyor. In environments with explosion risks, the appropriate regulations for components used in such environments must be taken into account.

Fig. 2.2.1



3 Outline

3.1 Structure

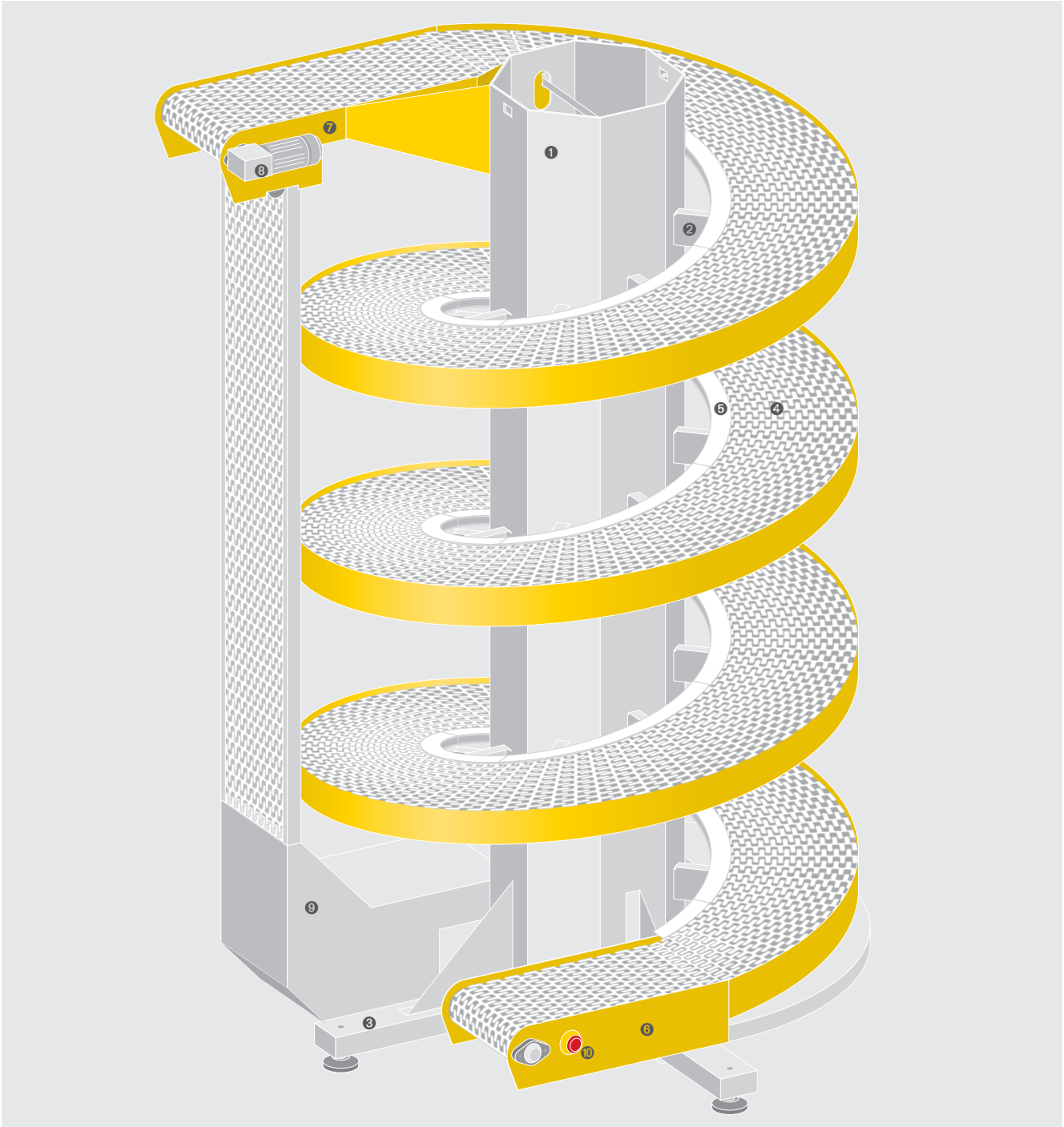
1 Tower
2 Arms
3 Base profile
4 Modular belt
5 Rolling curve support
6 In-feed section
7 Out-feed section
8 Drive motor
9 Return section modular belt
10 Emergency stop switch

3.2 Types/main dimensions

The structure shown is just an example. Where the principle is the same, there can be differences in design and dimensions.

The deniconda® spiral conveyor's dimensions are specific to the order concerned and stated in the order confirmation from denipro.

Figure 3.1.1 – deniconda® anticlockwise, forward conveying.



4 Transport and positioning

Stop

The conveyor may only be set up and adjusted by technically trained personnel (e.g. fitters) who are experienced in dealing with heavy loads and who have proper lifting equipment. When transporting, comply with the lifting equipment's maximum lifting load and the packaging units' centre of gravity. The surface must be firm, load-bearing and flat. Prevent third parties from entering the place where assembly takes place.

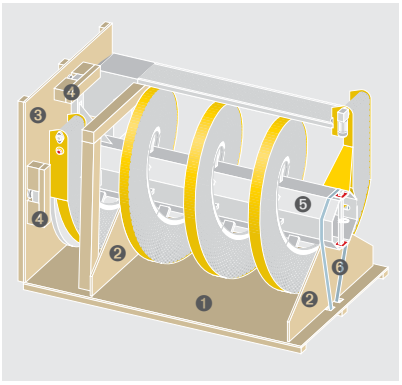


Fig. 4.2.1

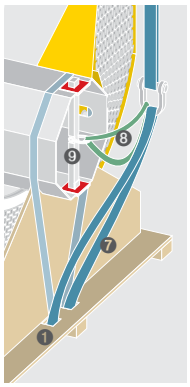


Fig. 4.2.2

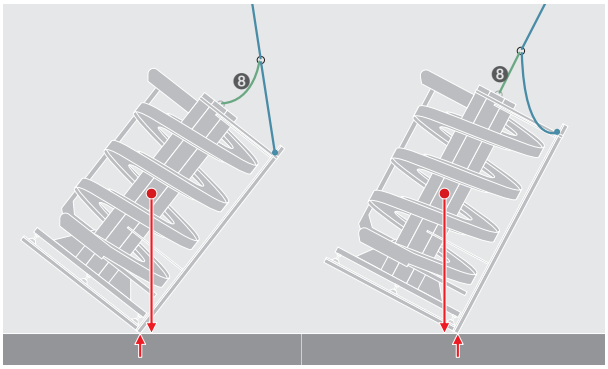


Fig. 4.2.3

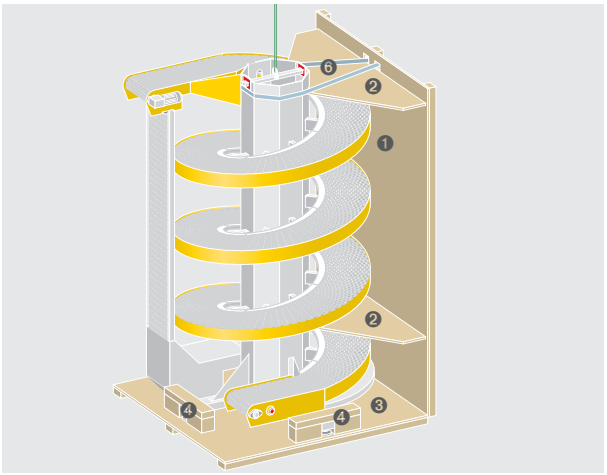


Fig. 4.2.4

4.1 Transport

After carrying out a test run in the plant, deniconda® spiral conveyors are delivered ready fitted. The conveyor is transported lying down on a wooden surface that is totally enclosed or covered with foil.

4.2 Positioning

1. Open packaging. Put the transport plate (1) with the tower support (2), front plate (3) with the attachments on the base profile 4) and tensioning strap (6) between the tower (5) and the transport plate. Remove all other foils/ packaging/transport locks (fig. 4.2.1).
2. Guide the first lifting strap (7) as shown through the openings on the base (1). Engage the second lifting strap (8) on the lifting device.

   Stop

   The lengths of the two lifting straps must be such that the second lifting strap (8) can absorb the load once the tilt point has been reached.
   (Figs. 4.2.2 and 4.2.3).
3. Carefully position deniconda® with a crane/winch or similar.

   Stop

   Ensure the lifting straps cannot slip.
   Do not walk under suspended loads.
4. Loosen the tensioning strap (6) and dismantle transport plate (1) with tower supports (fig. 4.2.4).
5. Dismantle the attachments on the base profile (4) (fig. 4.2.4).
6. Lift up deniconda® slightly, remove the front plate (3) and put the conveyor down in the position required (fig. 4.2.4).
7. Adjust deniconda®. The tower must be vertical and keep the right distance and angles to the conveyors in front and behind. Once the check nuts have been loosened, the height of the support feet is infinitely adjustable.
8. Tighten the check nuts on the support feet, fasten the support feet with 2 screws to the base.
9. A qualified electrician must carry out electrical installation according to the wiring plan. Switch on the conveyor briefly to check the operating direction.
10. Commission according to section 5.

5 Operation

5.1 Commissioning/re-commissioning

Stop

When several single conveyors are combined to make whole conveyor systems, risks can occur at the transition points. Particularly when in reach of people and when installed above accessible areas, separate protective devices might be necessary and must be implemented. Initial commissioning may only be carried out once all prescribed safety precautions have been properly applied (e.g. pop-out rollers, clothing etc).

Make sure there are no foreign bodies on the deniconda® spiral conveyor and remove if necessary. Switch on the conveyor and observe. If the conveyor is not running properly and smoothly, switch it off and eliminate the cause.
Some of the reasons for uneven running can be fitting mistakes and foreign bodies.

5.2 Shutting down

To shut down, the system must be switched off at the main switch and secured from being switched on again.

Stop

The machinery must be shut down in particular before all assembly, maintenance and repair work is carried out.

5.3 Disposal

The machine must be disposed of in line with all relevant stipulations on disposal.

6 Maintenance/cleaning

6.1 Maintenance

deniconda® spiral conveyors need no maintenance and no lubrication must be applied on any account.

6.2 Servicing/cleaning

To ensure the conveyor functions properly, in addition to the regular maintenance for the whole conveyor, deniconda® spiral conveyors should be looked at regularly to check for soiling and damage and to see that all parts turn easily. Jolting operation is probably the result of soiling.

Stop

Before carrying out any fitting, maintenance and repair work, the main switch on the section of the conveyor concerned must be switched off and prevented from being switched on again.

Loose particles can be removed by careful cleaning with compressed air. Remove any dirt that has attached itself with commonly available, mild cleaning agents.

In the stainless steel version, deniconda® spiral conveyors are also suitable for thorough cleaning procedures
- by water jet at low rinsing pressure or
- carefully from a distance with a water jet at high pressure (flat fan nozzle).

Stop

The motor is not splashproof.

If damage has occurred, or there are clear signs of wear and tear, the components concerned must be exchanged.

Warning

Particularly in the food industry, current hygiene stipulations and statutory requirements must be adhered to.

7 Repairing

Stop

Before carrying out any fitting, maintenance and repair work, the main switch on the section of the conveyor concerned must be switched off and prevented from being switched on again.

7.1 Exchanging a curve support

1. Switch off the drive and prevent from being witched on again.
2. Push together the modular belt where the segment on the curve support is to be exchanged and relax it as a result (fig. 7.1.1).
3. Pull the modular belt (2) outwards until the segment that needs to be exchanged is freed (fig. 7.1.1).
4. Unscrew the outer and middle screw (3) on the segment and carefully take off the segment (fig. 7.1.1).

Please note:
Pay attention to the distance washers under the segment.

5. If necessary, put the distance washers in the right position, insert new segment and screw down tightly.
6. Insert intermediate belt correctly and push the modular belt onto the new curve support.
7. Start the conveyor again as shown in section 5.

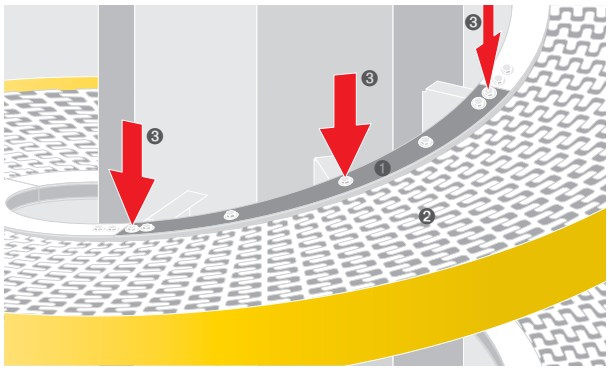


Fig. 7.1.1

7.2 Exchanging the intermediate belt

1. Switch off the drive and prevent from being switched on again.
2. Loosen the 4 screws on the cover (1) and remove the cover (fig. 7.2.1).
3. Pull out the faulty intermediate belt (2) (fig. 7.2.2)
4. Mark the length specified by Denipro on the new intermediate belt (3), but do not cut the belt to length yet. Affix the open end of the belt with adhesive strips to the inner edge of the modular belt (fig. 7.2.3).

Warning
The intermediate belt's textile coating must face the curve support.

5. Switch on and observe the conveyor and let deniconda® run slowly. Now insert the intermediate belt.
6. Switch off the conveyor and prevent from being switched on again once the end of the intermediate belt that is affixed to the modular belt has passed the last curve support.
7. Guide the intermediate belt over the return rollers in the tower and at the bottom pull out from the opening created.
8. Make the intermediate belt endless according to the belt manufacturer's instructions.
9. Fasten the cover (1) (fig. 7.2.1).
10. Start the conveyor again as shown in section 5.

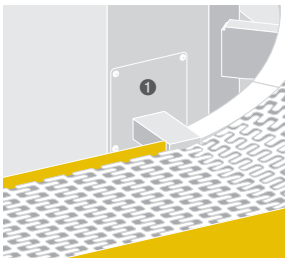


Fig. 7.2.1

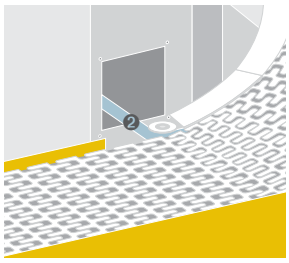


Fig. 7.2.2

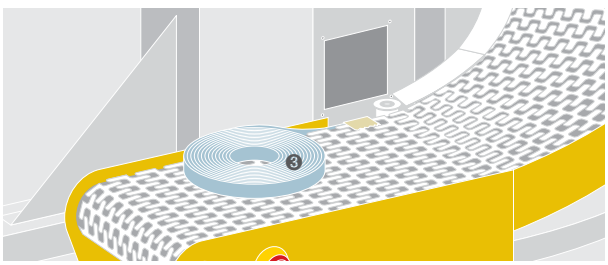


Fig. 7.2.3

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